

# TECHNICAL DATA SHEET

Date of Issue: 2016/09/02

## Zirconium Metal powder, Grade ZM, suspended in ethyl alcohol

CAS-No.	7440-67-7
EC-No.	231-176-9
Molecular Formula	Zr
Product Number	453052

### APPLICATION

For the manufacture of non-sedimenting getter suspensions in lamps and vacuum tubes; as an igniter paste for the production of flash cubes; for the production of highly reactive and quick fuze compositions in pyrotechnics for use in ammunition, explosives, airbags and pretensioners.

### FURTHER INGREDIENTS

Hafnium	
CAS-No.	7440-58-6
EC-No.	231-166-4
Ethanol	
CAS-No.	64-17-5
EC-No.	200-578-6

### SPECIFICATION

(Zr + Hf)total	97.3 +/- 0.9 %
(Zr + Hf)active	89.4 +/- 3.4 %
Hf	approx. 2 % (natural content)
Mg	max. 0.6 %
Si	max. 0.25 %
H	max. 0.2 %
Fe	max. 0.07 %
Al	max. 0.03 %
Ca	max. 0.05 %

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## METHOD OF ANALYSIS

Determination of oxidation value, particle size distribution, average particle size; specific surface area and combustion properties; gravimetric analysis of zirconium, verification of nitrogen content and accompanying impurities by special analytical methods. For specific information on Rockwood Lithium standard determination methods see our delivery program.

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## PHYSICAL PROPERTIES

Appearance	suspension
Color	dark gray
Melting point/ range	1,852 °C (Zirconium powder)
Flash point	11 - 13 °C ([CAS: 64-17-5])
Boiling point/boiling range	78 °C ([CAS: 64-17-5])
Density	6.5 g/cm <sup>3</sup> at 20 °C (Zirconium powder) 0.79 g/cm <sup>3</sup> at 20 °C (Ethanol [CAS: 64-17-5])
Bulk density	1,200 - 2,300 kg/m <sup>3</sup> (Zirconium powder)
Water solubility	(completely miscible) ([CAS: 64-17-5]) (practically insoluble) (Zirconium powder)
Grain Size	min. 99.9 % < 45 µm by sieving APS 2.5 +/- 0.5 µm acc. to Blaine
Additional Physical Properties	Ignition Point: 190 +/- 30 °C Combustion Rate: 20 +/- 10 sec/50 cm (Albemarle standard) Gain on Ignition: 31.4 +/- 1.2 % (weight increase by combustion)

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## HANDLING & STORAGE

Handling Highly flammable solid. Dust explosion hazard.

A fine zirconium metal powder, easily ignitable and rapidly burning off at white heat.

Keep away from flames, sparks and heat sources; use ground-connected metallic apparatus to avoid sudden ignition by electrostatic discharge; self-ignition is possible; vacuum-drying of suspensions not recommended; wear gloves, a face shield or goggles; in case of fire, cover only with sand, limestone or with a dry extinguishing powder suitable for metal fires class D;

**DO NOT USE WATER!**

Refer to our safety data sheet and special precautionary advice for specific safety information!

## TRANSPORT & PACKAGING

UN number 1308

ADR	Class: 3	PG: II	Label: 3
RID	Class: 3	PG: II	Label: 3
IMDG	Class: 3	PG: II	Label: 3
IATA_C	Class: 3	PG: II	Packing instruction (cargo aircraft): 364
IATA_P	Class: 3	PG: II	Packing instruction (passenger aircraft): 353

Hazard pictograms



Signal Word Danger

H&P Phrases See Safety Data Sheet

Labelling The labelling is according to EU-GHS classification ((EG) 1272/2008) and may vary in other countries. Please refer to the respective Safety Data Sheet for your country.

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## Packaging

Zirconium metal powder is shipped under min. 30 % weight ethyl alcohol. Standard packaging size: 2.5 kg net weight, other sizes on request.

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## OTHER INFORMATION

Further Related  
Documents

Safety Data Sheet

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